Evaluation of Requirements for Volt/Var Control and Optimization Function in Distribution Management Systems

To meet the requirement from new visions within "smart grid" and to provide solutions for many challenges that DSOs (Distribution System Operators) are facing today, we need to develop advanced DMS (Distribution Management System) applications. A centralized Volt/Var Control (VVC) is one of the most desirable and important functions within Distribution Automation systems and DMSs. The overall Volt/Var control function is concerned with maintaining system voltage profile within a desired range and minimizing system losses by controlling the reactive power flow. The main objective of this paper is to review and evaluate the existing and recent techniques and algorithms for advanced VVC applications and identify the requirements for integrated Volt/Var control and optimization function in distribution management systems within the smart grid concepts.

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